

## **CLAIMS**

### **What is claimed is:**

1. A method of filtering phonetic units to be used within a concatenative text-to-speech voice comprising the steps of:
  - receiving at least one phonetic unit that has been automatically extracted from a speech corpus in order to construct a concatenative text-to-speech voice;
  - calculating an abnormality index for said phonetic unit, wherein said abnormality index indicates a likelihood of said phonetic unit being misaligned;
  - comparing said abnormality index to a normality threshold;
  - if said abnormality index does not exceed said normality threshold, marking said phonetic unit as a verified phonetic unit; and,
  - building said concatenative text-to-speech voice using said verified phonetic units.
2. The method of claim 1, further comprising the step of:
  - if said abnormality index exceeds said normality threshold, marking said phonetic unit as a suspect phonetic unit.
3. The method of claim 2, further comprising the step of presenting said suspect phonetic unit within an alignment validation interface, wherein said alignment validation interface comprises a validation means for validating said suspect phonetic unit and a denial means for invalidating said suspect phonetic unit.
4. The method of claim 3, wherein said at least one phonetic unit comprises a plurality of phonetic units, said method further comprising the steps of:
  - providing at least one navigation control within said alignment validation interface; and,
  - upon a selection of one of said navigation controls, navigating from said suspect phonetic unit to a different suspect phonetic unit.

5. The method of claim 3, further comprising the steps of:  
providing an audio playback control within said alignment validation interface;  
and,  
upon a selection of said audio playback control, audibly presenting said suspect phonetic unit.
6. The method of claim 3, further comprising the step of:  
if said validation means is selected within said alignment validation interface, marking said suspect phonetic unit as a verified phonetic unit.
7. The method of claim 3, further comprising the steps of:  
if said denial means is selected within said alignment validation interface, marking said suspect phonetic unit as a rejected phonetic unit; and,  
excluding said rejected phonetic units from said building of said concatenative text-to-speech voice.
8. The method of claim 1, wherein said at least one phonetic unit comprises a plurality of phonetic units, said method further comprising the steps of:  
presenting a graphical distribution of the abnormality indexes of said plurality of phonetic units within a normality threshold interface; and,  
adjusting said normality threshold with said normality threshold interface.
9. The method of claim 1, said calculating step further comprising the steps of:  
examining said phonetic unit for a plurality of abnormality attributes;  
assigning an abnormality value for each of said abnormality attribute; and,  
calculating said abnormality index based at least in part upon said plurality of abnormality values.
10. The method of claim 9, said calculating step further comprising the steps of:  
for each abnormality attribute, identifying an abnormality weight and multiplying said abnormality weight and said abnormality value; and,

adding results from said multiplying to determine said abnormality index.

11. The method of claim 9, said assigning step further comprising the steps of:  
examining said phonetic unit for at least one abnormality attribute characteristic;  
for each abnormality attribute characteristic, determining at least one abnormality parameter;  
utilizing said abnormality parameters within an abnormality attribute evaluation function; and,  
calculating said abnormality index using said abnormality attribute evaluation function.

12. A system of filtering phonetic units to be used within a concatenative text-to-speech voice comprising the steps of:  
means for receiving at least one phonetic unit that has been automatically extracted from a speech corpus in order to construct a concatenative text-to-speech voice;  
means for calculating an abnormality index for said phonetic unit, wherein said abnormality index indicates a likelihood of said phonetic unit being misaligned;  
means for comparing said abnormality index to a normality threshold;  
if said abnormality index does not exceed said normality threshold, means for marking said phonetic unit as a verified phonetic unit; and,  
means for building said concatenative text-to-speech voice using said verified phonetic units.

13. A machine-readable storage having stored thereon, a computer program having a plurality of code sections, said code sections executable by a machine for causing the machine to perform the steps of:  
receiving at least one phonetic unit that has been automatically extracted from a speech corpus in order to construct a concatenative text-to-speech voice;  
calculating an abnormality index for said phonetic unit, wherein said abnormality index indicates a likelihood of said phonetic unit being misaligned;

comparing said abnormality index to a normality threshold;  
if said abnormality index does not exceed said normality threshold, marking said phonetic unit as a verified phonetic unit; and,  
building said concatenative text-to-speech voice using said verified phonetic units.

14. The machine-readable storage of claim 13, further comprising the step of:  
if said abnormality index exceeds said normality threshold, marking said phonetic unit as a suspect phonetic unit.

15. The machine-readable storage of claim 14, further comprising the step of presenting said suspect phonetic unit within an alignment validation interface, wherein said alignment validation interface comprises a validation means for validating said suspect phonetic unit and a denial means for invalidating said suspect phonetic unit.

16. The machine-readable storage of claim 15, wherein said at least one phonetic unit comprises a plurality of phonetic units, said method further comprising the steps of:  
providing at least one navigation control within said alignment validation interface; and,  
upon a selection of one of said navigation controls, navigating from said suspect phonetic unit to a different suspect phonetic unit.

17. The machine-readable storage of claim 15, further comprising the steps of:  
providing an audio playback control within said alignment validation interface;  
and,  
upon a selection of said audio playback control, audibly presenting said suspect phonetic unit.

18. The machine-readable storage of claim 15, further comprising the step of:  
if said validation means is selected within said alignment validation interface, marking said suspect phonetic unit as a verified phonetic unit.

19. The machine-readable storage of claim 15, further comprising the steps of:  
if said denial means is selected within said alignment validation interface,  
marking said suspect phonetic unit as a rejected phonetic unit; and,  
excluding said rejected phonetic units from said building of said concatenative  
text-to-speech voice.

20. The machine-readable storage of claim 13, wherein said at least one phonetic  
unit comprises a plurality of phonetic units, said method further comprising the steps of:  
presenting a graphical distribution of the abnormality indexes of said plurality of  
phonetic units within a normality threshold interface; and,  
adjusting said normality threshold with said normality threshold interface.

21. The machine-readable storage of claim 13, said calculating step further  
comprising the steps of:  
examining said phonetic unit for a plurality of abnormality attributes;  
assigning an abnormality value for each of said abnormality attribute; and,  
calculating said abnormality index based at least in part upon said plurality of  
abnormality values.

22. The machine-readable storage of claim 21, said calculating step further  
comprising the steps of:  
for each abnormality attribute, identifying an abnormality weight and multiplying  
said abnormality weight and said abnormality value; and,  
adding results from said multiplying to determine said abnormality index.

23. The machine-readable storage of claim 21, said assigning step further  
comprising the steps of:  
examining said phonetic unit for at least one abnormality attribute characteristic;  
for each abnormality attribute characteristic, determining at least one abnormality  
parameter;

utilizing said abnormality parameters within an abnormality attribute evaluation function; and,

calculating said abnormality index using said abnormality attribute evaluation function.